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(54) **PULLULAN REGENERATIVE MATRIX**

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(58) **Field of Classification Search**

CPC A61K 35/28

See application file for complete search history.

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(57) **ABSTRACT**

Compositions and methods are provided for the manufacture and use of a pullulan-based collagen hydrogel film with controlled porosity. The hydrogel is fabricated with salt-induced phase inversion and cross-linking to form a reticular scaffold. This soft collagen scaffold displays excellent handling characteristics, durability, and a porous dermal-like ultrastructure that is maintained in vitro. Cells, including cells involved in tissue repair, are viably sustained within the scaffold. The hydrogel films are biodegradable, and find particular use in wound healing, where the hydrogel scaffold can be replaced by dermal cells over time.

22 Claims, 12 Drawing Sheets